Social stigma and executive compensation

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ABSTRACT

We document that executives working at firms perceived negatively in light of social norms, such as tobacco, gambling and alcohol, earn a significant compensation premium. The premium compensates for personal costs executives bear due to their employer's negative public perception and include: (i) a reduced likelihood these CEOs will serve as directors on other firms' boards, which associates with lower executives' social status, and (ii) impaired job mobility as employers shun stigmatized executives. The compensation premium is not explained by higher managerial skill required in firms we investigate, higher employment contract risk, political capital, litigation risk, or differences in corporate governance quality, and robust to endogeneity concerns. Our results highlight the significant impact job-related social stigma has on executive compensation.

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1. Introduction

Building upon the executive compensation and social economics literature, this study examines how the negative public perception of the employer affects executive compensation. Social economics literature has long recognized that social norms shape economic behaviour, for example, through the effect they have on racial discrimination in the workplace (Altonji and Blank, 1999; Levitt, 2004). Our study is motivated by the anecdotal evidence that workers demand higher wages to compensate for the social stigma attached to their work. For example, Zelizer (1979) describes the case of morgue attendants at hospitals, who earn higher salaries compared to other attendants to compensate for the stigma their work involves. She also quotes the meeting of the Jewish Funeral Directors of America, which highlighted the difficulty of attracting young people to work in funeral parlours despite high starting salaries. We propose that employment at firms perceived negatively in light of social norms leads to personal costs, such as reduced social status or impaired job mobility, which discourages workers from seeking employment at stigmatized firms (Major and O'Brien, 2005; Inzlicht et al., 2006). Reduced labour supply means stigmatized employers have to offer higher wages to attract and retain employees.

To study how social norms affect executive compensation, we first look at executive remuneration in 'sin' industries, i.e. industries perceived negatively by the public because their products are considered harmful to consumers' physical and mental health, and their consumption is discouraged by society (Anielski and Braaten, 2008; Beneish et al., 2008; Gerstein et al., 2004).[2]

[2] Examples reflecting negative social perception of certain industries are also common in popular press, e.g. The Sydney Morning Herald article follows a journalist who "spent a day at the headquarters of Australia's largest tobacco company, British American Tobacco Australia, for just one reason: to discover what possesses people to work for a company whose products are loathed by the public. […] One manager even mentioned the higher salary he got when he joined the company, which gives extra weight to the term 'making a killing'". Our tests focus on sin firms' executives as they are perceived to personify their firms' activities (Bower and Weinberg, 1988), thus negative social perception is likely to affect them more than other employees.

The three industries we examine include alcohol, gambling, and tobacco as they are most commonly classified as 'sin' industries (Hong and Kacperczyk, 2009; Fauver and McDonald, 2014; Chong et al., 2006; Salaber, 2009; Liu et al., 2014). We then extend the analysis to a broad sample of firms that violate social norms, which include arms manufacturers and sellers, and firms that violate social norms related to respect for human rights, firm's environmental impact, interactions with local communities and product safety. These settings highlight that our results are not specific to sin industries, but affect a broad range of companies that break social norms, which helps generalize our conclusions.

We document a significant premium of approximately $279 thousand (inflation-adjusted) paid to sin executives, which represents 24% of the sample mean compensation of $1.180 million. The premium is significant controlling for standard determinants of executive remuneration, which include controls for managerial skill, employment contract risk, executive characteristics, corporate governance, investor monitoring, and political capital. The premium is paid to all executive groups and is the highest for CEOs ($388 thousand vs. $247 thousand for CFOs and $262 thousand for other executives), consistent with CEOs personifying their firms' activities and negative social perception affecting them more than other employees (Bower and Weinberg, 1988).

The key to establish causality is to address endogeneity in executive compensation, such as the concern that our results capture unobserved or unmeasured sin industries effects. We address endogeneity in four ways. First, we use the within-sin-industries variation in social stigma and show that the premium varies with the degree of social disapproval—the premium is largest in the tobacco industry, which is arguably the most harmful and hence most stigmatized (Anielski and

Braaten, 2008; Beneish et al., 2008; Gerstein et al., 2004), and is the smallest in the alcohol industry.[3]

Second, we use quasi-random shocks to identify exogenous variation in social disapproval of sin firms. As the identification strategy, we use the per-capita spending on smoking prevention in individual states as a proxy for the local electorate's aversion to smoking. We report that the compensation premium is higher for tobacco firms headquartered in states that spend more on smoking prevention.[4] As a corroborating test, we also examine changes in the compensation premium in the firearms and military industries in the response to the Virginia Tech Massacre, the deadliest attack by a lone gunman in U.S. history.[5] We focus on these industries as Vergne (2012) documents public disapproval for arms manufacturers highlighting that they are often referred to as 'merchants of death'. A difference-in-differences test shows an increase in the compensation premium in the firearms and military industries after the massacre, in line with the increased stigmatization of the two industries.

Third, we find that sin firms that improve their public image through charitable giving, support for housing, support for education, volunteer programs, community engagement and other community programs pay a lower compensation premium. Thus, moderating the negative public perception helps to lessen the effect social stigma has on executive compensation.

Fourth, we identify instances when non-sin firms violate social norms regarding respect for human rights, engagement with local community, employee relations, and product safety (on average 36% of sample firm-years). Executives at such firms earn a compensation premium and

[3] Consistently, an annual Harris public opinion poll ranked tobacco firms the lowest in public's esteem (Harris Interactive, 2004).
[4] Section 5.2 reviews past studies that report either no effect or a limited impact smoking prevention spending has on demand for cigarettes, which builds confidence the instrument is uncorrelated with sin firms characteristics.
[5] On April 16, 2007 a 23-year-old student killed 32 students and faculty members at Virginia Tech.

the effect is incremental to the sin industry membership. The evidence on the compensation premium in these firms persists when we control for firm-executive fixed effects. As fixed effects control for time-invariant industry and executive characteristics, these results build confidence our conclusions are not due to unobserved industry or executive effects. In sum, tests that address endogeneity provide support for our conclusion that the premium we identify reflects compensation for social stigma.

Our final tests shed light on some of the personal costs sin executives face that result from unfavourable social perception of their employers. In particular, we study executives' service on other firms' boards and their re-employment opportunities (Chrisafis, 2005; Crocker and Major, 1989; Miller and Kaiser, 2002; Miller and Major, 2003; Schmitt and Branscombe, 2002). Outside board seats are considered an earmark of social status (Kaplan and Reishus, 1990) and a source of additional income.[6] If working in stigmatized firms compromises executives' social status, we expect them to receive fewer offers to join other boards. Consistent with this prediction, we show that sin firms' CEOs are less likely to serve as board members in other firms and the economic magnitude of this effect is meaningful. Specifically, the number of outside board seats held by sin firms' CEOs is on average 14% lower than for non-sin firms CEOs (for tobacco CEOs, this fraction increases to 35%). Further, when CEOs hold outside board seats, it is in smaller firms where board membership is less prestigious. Specifically, conditional on a CEO having at least one outside board seat, sin firm association reduces the odds of sitting on a prestigious outside board by 63%, a significant amount.

[6] D'Aveni and Kesner (1993) and Belliveau et al. (1996) highlight that executives garner social respect and status when they sit on other firms' boards of directors. The size and prestige of the boards executives sit on also form the basis for self-evaluation and appraisal of others (Kilduff and Krackhardt, 1994).

We also examine how social stigma influences executives' re-employment opportunities. We report that (i) sin firm executives are less likely to find a new job after quitting a sin firm, (ii) finding a new job takes them longer, (iii) when they find a job, it is at less prestigious firms and (iv) they are less likely to find re-employment in the same industry. These effects are also economically significant. To illustrate, the odds that executives leaving sin firms will find a job within five years are 68% lower compared to non-sin executives. We also confirm that executives earn a compensation premium when switching from a non-sin firm to a sin firm, but their compensation reduces when they switch from a sin firm to a non-sin firm. Jointly, our results are consistent with sin firm executives being less desirable as board members and new employees because of the social stigma they bear.[7] The prediction that certain firms do not wish to be associated with executives from sin firms is consistent with the evidence in Hong and Kacperczyk (2009) and Liu et al. (2014), who find that some institutional investors do not invest in sin industries to avoid an association with firms that promote vice.

This study offers three important contributions. First, we add to the literature on the determinants of executive compensation by showing how negative social perception of the employer affects executive compensation. Standard contracting models (Ross, 1973; Grossman and Hart, 1983; Holmstrom and Milgrom, 1987) ignore the effect social context has on managerial remuneration, but we show this effect is substantial. Mathios (1989) argues that ignoring the effect of social norms can seriously distort our understanding of compensation policies. As executive compensation contracts are among the most important, and most controversial, our study highlights

[7] The number of outside board seats also indicates connectedness of executives, which suggests that sin executives have smaller social networks compared to other executives. We acknowledge that impeded labour market opportunities illustrates but one dimension of personal costs stigmatized executives bear. Other costs include stress (Crocker and Major, 1989; Schmitt and Branscombe, 2002), stigmatization in local communities (Miller and Kaiser, 2002; Miller and Major, 2003) or even acts of violence against stigmatized individuals (Chrisafis, 2005).

the significant impact social norms have on these contracts. This finding is particularly important considering that a large proportion of the cross-sectional variation in executive compensation remains unexplained (Graham et al., 2012; Jensen and Murphy, 1990).

Second, we add to the debate on the controversially high levels of executive compensation in listed firms, particularly at sin firms. To illustrate, the U.S. Top Executive Compensation Report lists CEOs in the tobacco industry as earning the highest median compensation compared to any other industry.[8] The controversy surrounding compensation contracts in the tobacco industry is also reflected by the involvement of the U.S. Supreme Court in the case of the incentive plan for American Tobacco executives (*Rogers v. Hill*), which was deemed unjustifiably high and bearing no relation to the value of executives' services.[9] Consistent with Fahlenbrach (2009), our results suggest that high executive compensation in some industries is not due to poor corporate governance. Rather, it can reflect compensation for personal costs executives bear due to the negative social perception of these industries.

Third, our study adds evidence to the nascent literature that examines how social norms affect a firm's economic performance and internal processes (Chong et al., 2006; McGuire et al., 2012; Hong and Kacperczyk, 2009; Leventis et al., 2013; Liu et al., 2014). Specifically, we show that one channel through which social norms affect economic performance is labour contracting: a firm breaking social norms has to offer higher compensation to its employees. Our study also complements the literature that examines links between Corporate Social Responsibility (CSR) and executive compensation (Coombs and Gilley, 2005; Deckop et al., 2006; Fry et al., 2006; Pandher and Currie, 2013; Madsen and Bingham, 2014). One conclusion of these studies is that managers

[8] The U.S. Top Executive Compensation Reports are available at www.conference-board.org.
[9] American Tobacco Company executives received 10% of company's earnings, an amount the Supreme Court deemed too high and bearing no relation to executives' effort.

are willing to accept lower compensation when joining a firm that engages in social initiatives (Miles and Miles, 2013; Madsen and Bingham, 2014). These results are consistent with our findings that firms engage in reputation building to lower their negative social perception and stigma, which in return reduces the compensation premium.

2. Literature Review

Social norms reflect rules and standards that guide and constrain social behaviour (Liu et al., 2014). We follow Akerlof (1980) and Hong and Kacperczyk (2009) and define social norms as an act whose utility is dependent on the beliefs or actions of other members of the community. Social economics literature has a long tradition of examining how social norms affect group interactions and labour contracting (Becker, 1957; Akerlof, 1980). In this study, we focus on the impact violating social norms have on executive compensation. To date, only a handful of studies examined how the effect of social norms is priced in economic activity. Hong and Kacperczyk (2009) and Fauver and McDonald (2014) investigate the value and ownership structure of tobacco, gambling, and alcohol industries. They find that sin firms are valued consistently lower relative to their fundamentals, and that these firms have smaller ownership by norm-constrained institutions, such as pension funds, and less analyst following. Chong et al. (2006), Salaber (2009), and Liu et al. (2014) argue that institutional investors underinvest in sin firms because of the social stigma such investments involve. The evidence on underpricing, lower institutional ownership, and lower analyst coverage suggests that violating social norms leads to significant costs for sin firms.

Other examples of how social norms affect corporate behaviour include their impact on audit fees and acquisition activity. Leventis et al. (2013) document that sin firms pay higher audit fees despite having higher quality financial reporting. They propose that higher audit fees compensate

for the higher effort auditors need to devote to sin firms that relates to their negative media coverage. Beneish et al. (2008) document that tobacco firms engage in frequent acquisitions to protect against expropriation and litigation by public authorities and private claimants. Acquisitions help (i) divest a firm's excess cash, which is easier to claim than physical assets in the event of an expropriation attempt, and (ii) they expand the firm's political capital and influence, which can reduce the likelihood of expropriation.

The study closest to ours is Deng and Gao (2013), who examine the effect of environment's quality at the firm's headquarters on CEO compensation. They build on "disamenity compensation" literature (Power, 1980; Myers, 1987) and document that firms in polluted, high crime rate, or otherwise unpleasant locations pay higher compensation to their CEOs compared to firms located in more liveable locations. They attribute the result to CEOs demanding higher compensation for a lower quality of life. Yonker (2016) documents that firms located in less desirable locations are more likely to hire local CEOs, consistent with the non-local candidates being less willing to move to these areas. Chang et al. (2016) argue that executives require higher pay in firms with higher risk of financial distress to compensate for (among others) a possible loss of managerial reputation in case financial distress materializes. On the opposite side of the spectrum, studies document a compensation *discount* in nonprofit organizations, which has been attributed to employees' personal satisfaction gained from providing goods with positive social externalities (Weisbrod, 1983; Preston, 1989; Roomkin and Weisbrod, 1999) and to higher demand for non-skilled labor (Leete, 2001; Jones, 2015).

We extend past literature by examining how social norms affect executive compensation at firms that engage in legal, but controversial business activities. Specifically, we propose that employment in stigmatized industries leads to personal costs that employees expect to be compensated for. We build on past evidence documenting substantial personal costs related to

social stigma. Allison (1998) documents that, due to stigma, African Americans have higher risk of physical attack, and lower employment and education access, which increases their stress and frustration. Stigma increases personal uncertainty (Crocker and Major, 1989) and effort levels as individuals have to exert more control over their actions and behaviour in a social setting (Muraven and Baumeister, 2000). Stigma often relates to inherent individual characteristics, such as ethnic origin or social class, over which an individual has little discretion. However, workers select their employers and high perceived personal costs related to employment at stigmatized firms can be discouraging. Reduced labour supply means a firm has to offer a compensation premium to attract and retain employees.

We focus on sin industries as a natural setting for testing our prediction. Negative social attitudes towards alcohol consumption and gambling are found in early Christian, Hindu, and Islamic texts (Fam et al., 2004). Negative public attitude towards tobacco relates to the medical evidence from the 1960s on the link between cigarette smoking and cancer (United States Surgeon General's Advisory Committee on Smoking and Health, 1964). Social stigma stems from the addictive and pathological effects sin industry products have on consumers, their families, and communities (Exum, 2002; Klostermann and Fals-Stewart, 2006; Card and Dahl, 2011; Anielski and Braaten, 2008; Galvin et al., 2004; Gerstein et al., 2004; Grinols, 2004; Hudson, 2008; Leventis et al., 2013). We formalize our first hypothesis as:

Hypothesis 1: *There is a premium in executive compensation at firms perceived negatively in light of social norms.*

The perception of whether a firm's activity is 'sinful', thus should be stigmatized, is subjective (Shimp and Kavas, 1984) and time-varying (Fauver and McDonald, 2014). To address this concern and sharpen the analysis, we investigate how the variation in social attitudes affects the level of the compensation premium. Specifically, we expect that the compensation premium

should be larger when social aversion to sin firms is stronger, and smaller when firms offset their negative reputation by building a positive public image. This leads to our second hypothesis:

Hypothesis 2: *The premium in executive compensation at stigmatized firms increases with social aversion to the firms' activities.*

We propose that the premium compensates executives for impaired social standing due to employment at sin firms. One channel through which impaired social standing can manifest is via a reduction in executives' employment opportunities. In particular, we argue that executives from sin firms are less desirable as outside directors in other firms because their stigma can negatively impact the public image of the boards they would join. Further, social stigma can harm executives' future career prospects by making them less employable when leaving sin firms. These predictions lead to the following hypothesis:

Hypothesis 3: *Executives from stigmatized firms face worse employment opportunities*.

3. Research Design

This section first describes our measure of executive compensation, then we present our definitions of sin industries, and, finally, the regression model we use to detect the compensation premium in these industries.

3.1 The Measure of Executive Compensation and Definition of Sin Industries

We follow prior research (Roulstone, 2003; Gabaix and Landier, 2008) and use total compensation, *Comp*, as our main compensation measure. Total compensation includes salary, bonus, total value of restricted stock granted, total value of stock options granted, long-term incentive payouts, and all other total compensation.

Our identification of sin firms is similar to Hong and Kacperczyk (2009). Specifically, we define an indicator variable *Sin*, which takes a value of 1 if a firm belongs to alcohol, gambling, or tobacco industries, and is 0 otherwise. Firms with SIC codes in the range 2100–2199 are allocated to the tobacco industry. Firms with SIC codes in the range 2080–2085 are in the alcohol industry, and the gambling industry includes firms with NAICS codes 7132, 71312, 713210, 71329, 713290, 72112, and 721120.[10]

To sharpen the analysis, we disaggregate the sin group into the three individual industries. Specifically, the indicator variable *Alcohol* takes a value of 1 for firms in the alcohol industry, and 0 otherwise. *Gambling* is an indicator variable for firms in the gambling industry, and *Tobacco* is an indicator variable for firms in the tobacco industry. This disaggregation allows us to assess how the effect of social stigma varies across the three sin industries. We then regress executive compensation on the indicator for sin industries and standard predictors of executive remuneration.

3.2 Control Variables: Firm Characteristics

We identify firm-level controls from past executive compensation research. Executives tend to earn higher compensation working for larger and faster growing firms (Gabaix and Landier, 2008; Hartzell and Starks, 2003). We measure firm size by market capitalization (*MV*), which is the product of the number of shares outstanding and the closing price on the last trading day of the fiscal year, and by firm total revenue (*Sales*). We measure firm's growth by percentage sales growth (*Sales GR*), which is the ratio of total dollar sales for fiscal year *t* over total sales for the previous fiscal year minus 1.

[10] Our results are virtually unchanged when we use the list of sin firms from Kacperczyk available at http://pages.stern.nyu.edu/~sternfin/mkacperc/public_html/sinstocks.pdf. The drawback of that list is that it ends in 2003, which is before the end of our sample period.

We control for firm profitability and return performance because Hartzell and Starks (2003), Engel et al. (2010), Roulstone (2003), Chang et al. (2010), Nguyen and Nielsen (2014) and Fee and Hadlock (2003) document that better firm performance reflects managerial ability of the executive team and associates with higher compensation. Return on assets (*ROA*) is our accounting profitability measure defined as the ratio of income before extraordinary items to book value of assets. Market-adjusted returns (*XRET*) measure share price performance and are defined as the difference between the firm's and the S&P 500 index returns in a fiscal year *t*.

Executive remuneration increases with business risk to compensate for: (i) higher variability in compensation, and (ii) higher likelihood of bankruptcy and employment termination, which increases the risk of executive's compensation (Roulstone, 2003). We measure business risk by a firm's standard deviation of daily stock returns over the fiscal year *t* (*SD RET*). Finally, we control for industry concentration using the negative of the Herfindahl index (*negHHI*). Firms may have to pay higher compensation to attract executives in more concentrated industries.

3.3 Control Variables: Executive Characteristics

We distinguish between the CEO and other executives since the former earn on average higher compensation. Specifically, *CEO* is an indicator variable that takes a value of 1 if the executive has been CEO in a fiscal year, and 0 otherwise. We include an indicator variable for female executives (*Female*) as Bertrand and Hallock (2001), Gayle et al. (2012), Carter et al. (2017) and Newton and Simutin (2015) find significant differences in compensation between males and females. We also measure executive tenure at the firm (*Tenure*) because more senior executives earn on average higher compensation (Finkelstein and Hambrick, 1989).

Firms can pay higher compensation to attract managerial talent. We use Demerjian's et al. (2012) managerial ability score, *Ability*, to capture managerial ability. The score represents the

share of firm efficiency not attributable to firm-specific factors, thus likely attributable to the ability of the managerial team. Demerjian's et al. (2012) attributes higher score primarily to the CEO's skill.

3.4 Control Variables: Institutional Ownership and Corporate Governance

Higher compensation in sin firms may reflect lower quality of internal or external corporate governance, which allows managers to extract rents when negotiating their employment contracts (e.g. Anderson and Bizjak, 2003; Combs and Skill, 2003; Sun et al., 2009). To control for this effect, we include a measure of institutional ownership, *InstOwn,* which captures the quality of external corporate governance (e.g. David et al., 1998). Institutional investors are able to more closely monitor managerial performance and limit their opportunities for rent seeking (Gillan and Starks, 2000; Hartzell and Starks, 2003).

Higher quality corporate governance should reduce managerial entrenchment and enhance the efficiency of executive compensation contracts (Tosi and Gomez-Mejia, 1994; Conyon and Peck, 1998; Core et al., 1999; Bertrand and Mullainathan, 2001). We follow Core et al. (1999) and include their measures of corporate governance quality. *ChairCEO* is an indicator variable taking a value of 1 if the CEO is also the chairman of the board, and 0 otherwise. *BoardSize* is the total number of directors on the board. *InsideDirs* is the percentage of the board directors who are classified by the Institutional Shareholder Services (ISS, formerly RiskMetrics) database as "E" (employee/insider). *AppointDirs* is the percentage of outside directors that have been appointed to the board since the year when the current CEO was first classified as the CEO by the ExecuComp database. We consider an executive to be the CEO if the ExecuComp "CEO" indicator equals 1 or the executive has the highest pay for a firm-year and the executive's job title description includes 'CEO' or 'Chief Executive Officer'. *AffilDirs* is the percentage of the board directors who are

classified by the ISS database as "L" (linked). *InterlockDirs* is the percentage of the board directors for whom the "interlocking" variable provided by the ISS database is equal to 1. *OldOutDirs* is the percentage of outside directors over the age of 69. *BusyOutDirs* is the percentage of outside directors who serve on three or more other boards. *ExecOwn* is the percentage stock ownership of the executive. *BlockOwn* is an indicator variable equal to 1 if an internal non-CEO director owns at least 5% of outstanding shares, and 0 otherwise. *OutDirOwn* is the average stock ownership (as a percentage of outstanding shares) of outside directors at the firm's last board meeting date of the fiscal year.

3.5 Political Capital

Social stigma may incentivize sin firms to seek political capital as a way of reducing negative consequences of public disapproval. To build political capital, sin firms may appoint politically connected executives and the compensation premium may reward political connections, not social stigma. To address this issue, we collect information on lobbying expenditures from The Center for Responsive Politics for sin and non-sin firms in our sample.[11] Intense lobbying indicates firms with a higher need for political capital, i.e. these firms should be more likely to hire executives with political connections and pay them higher compensation. To capture lobbying intensity, we define a ratio of lobbying expenses to net sales, *Lobby*. Finally, we include a set of year dummies (*Year effects*) to capture trends in the labour market over time. Detailed definitions of variables are presented in Table 1.

[Insert Table 1 around here]

[11] The data from The Center for Responsive Politics is a common source of information on a firm's political connections (e.g. Gaikwad, 2013; Bertrand et al., 2014).

We adjust all dollar amounts (compensation, firm size and firm sales) for inflation, with the average value of the Consumer Price Index for 1982–1984 as the baseline. All continuous variables are winsorized at the 1% level. Control variables are lagged by one year. Our main model specification is (subscripts omitted):

$$Comp = \beta_0 + \beta_1 Sin + \beta_2 \ln MV + \beta_3 \ln Sales + \beta_4 Sales\ Growth + \beta_5 ROA + \beta_6 XRET + \beta_7 SD\ RET + \beta_8 negHHI + \beta_9 CEO + \beta_{10} Female + \beta_{11} Tenure + \beta_{12} Ability + \beta_{13} ChairCEO + \beta_{14} BoardSize + \beta_{15} InsideDirs + \beta_{16} AppointDirs + \beta_{17} AffilDirs + \beta_{18} InterlockDirs + \beta_{19} OldOutDirs + \beta_{20} BusyOutDirs + \beta_{21} ExecOwn + \beta_{22} BlockOwn + \beta_{23} OutDirOwn + \beta_{24} InstOwn + \beta_{25} Lobby + \sum_{k=1}^{20} \beta_{25+k} Year\ effects + u. \quad (1)$$

Standard errors are dual-clustered at the industry and fiscal year level (Petersen, 2009). We use Fama and French 49 industry definitions to define industry clusters. Because we expect social stigma to affect each of the three sin industries we examine, we also estimate a variant of model (1) where we use the three sin industries' indicator variables, *Tobacco*, *Gambling* and *Alcohol*.

4. Data

Information on executive compensation is from ExecuComp, which covers Standard & Poor's (S&P) 1500 constituents. Accounting data is from Compustat, and market data is from CRSP. The sample period is 1992–2012 as covered by ExecuComp. Similar to past studies (e.g. Yermack, 2006), we exclude financial firms (SIC codes 6000–6999) where the capital structure and compensation rules are different compared to other industries. We drop observations where book equity is negative, as these are typically distressed firms under non-standard management contracts (Gilson and Vetsuypens, 1993). Our final sample includes 82,625 firm-executive-fiscal year

observations, which represents 2,050 firms, and 5,775 executives. Of this, there are 1,086 firm-executive-fiscal year observations in sin industries—220 in tobacco, 473 in gambling, and 393 in alcohol.

Panel A of Table 2 presents descriptive statistics for executive compensation across sin and non-sin firms. Average total executive compensation in our sample is $1.18 million, which is comparable with earlier studies (e.g. Carter et al., 2017). Executives in sin industries earn significantly higher total compensation compared to other industries over the sample period ($1,943 million vs. $1,169 million, untabulated p-value for the difference is 0.000). This result is consistent with top ranking of sin industries executives' compensation (e.g. as presented in the U.S. Top Executive Compensation Reports). Further, tobacco executives tend to be paid more compared to alcohol and gambling executives, consistent with the higher stigmatization of the tobacco industry. Firm, executive and corporate governance characteristics presented in Panels B to D are comparable with previous studies (Core et al. 1999; Bertrand and Hallock 2001; Carter et al., 2017).

[Insert Table 2 around here]

5. Regression Results

5.1 Compensation Premium in Sin Industries

To test if sin firm executives receive a compensation premium, Table 3 reports regression results for model (1), where the indicator variable *Sin* captures the incremental compensation beyond the normal level that we would expect based on firm, executive and corporate governance characteristics.[12] We document a significant premium in executive compensation in sin firms,

[12] For brevity, we do not tabulate intercepts in the tables.

which amounts to $279,070 per annum (inflation-adjusted) or around 24% of average total compensation. Next, we disaggregate the sin dummy into the three individual sin industries. We find that the compensation premium varies with the magnitude of stigma, ranging from $642,860 in the tobacco industry to $185,730 in the alcohol industry, and with $195,930 in gambling. Hamilton et al. (2002) document higher social aversion to tobacco than the other two sin industries, which explains the higher average premium paid to executives in the tobacco industry. Table 3 results are consistent with hypotheses 1 and 2 that executives receive a compensation premium for work in industries perceived negatively in light of social norms and that the level of abnormal compensation varies with the magnitude of social stigma.

[Insert Table 3 around here]

Our main tests include all executives to emphasize that our findings apply to a broad range of executives. To ensure our results are not driven by a premium in a specific executive group (e.g. the CEOs), the last columns of Table 3 report regression results separately for CEOs, CFOs and other executives. The premium is paid to all executive groups and is the highest for CEOs ($388,160), consistent with CEOs personifying their firms' activities and negative social perception affecting them more than other employees (Bower and Weinberg, 1988). Importantly, the evidence on the compensation premium for non-CEOs suggests our results are unlikely to capture unique managerial ability required in sin firms. The skillsets of other executives, such as CFOs, tend to be more universal and CFO appointments are rarely motivated by unique managerial ability particularly suited for a given firm or an industry (Noland and Madden, 2012). To illustrate, Buettner et al. (2013, 379) argue that compared to CEOs, CFOs' skills are "highly transferable across firms and industries". Datta and Iskandar-Datta (2014, p. 1854) highlight that "unlike other upper echelon members, the responsibilities of the CFO are relatively more consistent and homogeneous across firms". Thus, the remuneration premium that we document for CFOs builds

confidence that our results do not pick up unique managerial skills required in sin firms.[13] Overall, Table 3 results support the existence of a compensation premium in sin industries that is not explained by standard compensation determinants.

In unreported results we perform two additional tests. First, our conclusions are unchanged when we use the logarithm of executive compensation as the dependent variable, and when we estimate equation (1) using the bootstrapped quantile regression. These tests show that our conclusions are not affected by skewness of the compensation variable and outliers. We do not use logarithm of total compensation in main tests because we are interested in dollar value effects as measured by regression coefficients, which is standard in the literature (e.g. Core et al., 1999; Hartzell and Starks, 2003). Using logs estimates the proportionate effect of a variable on compensation.

Second, Deng and Gao (2013) document that firms in polluted, high crime rate, or otherwise unpleasant locations pay higher compensation to their CEOs. Kedia and Rajgopal (2009) find that stock option grants are higher in states less likely to enforce non-compete agreements and in Metropolitan Statistical Area where employees prefer options. To ensure our results do not capture clustering of sin firms in specific geographic areas, we repeat equation (1) including headquarter state fixed-effects and find consistent results. In sum, additional tests support the stigma explanation for the abnormal compensation we identify.

5.2 Quasi-Natural Experiments

This section addresses the endogeneity concern, namely that sin classification correlates with unobserved executive or firm characteristics, which in turn correlate with executive compensation.

[13] For the CFO and other executives regressions, we remove CEO-specific variables and *Ability*, which is mainly driven by CEOs' strategic choices (Demerjian et al., 2012).

Our first test interacts the indicator variable for tobacco firms, i.e. the most stigmatized industry, with *SmokePrevent*, which captures the amount of money spent on smoking prevention per capita across federal states using 2010 population counts, i.e. *SmokePrevent*Tobacco*.[14] The intuition behind the test is that high spending on smoking prevention reflects high electorate's awareness of the harmful effects of smoking and social aversion towards tobacco products. Thus, we expect a larger compensation premium in tobacco firms headquartered in states that spend more on smoking prevention because executives in these states likely face greater social disapproval.

Our identification relies on the assumption that federal spending is exogenous to firm and executive characteristics. We believe our setting meets this condition for two reasons. First, the correlation between smoking prevention spending in a state and percentage cigarette use in that state is almost zero (https://www.cdc.gov/statesystem/cigaretteuseadult.html). This result suggests little impact smoking prevention has on smoking habits thus firm's fundamentals such as profitability. Second, past evidence suggests smoking prevention spending tends to have a near zero impact on tobacco firms' business outcomes. To illustrate, Lantz et al. (2000) review the literature on interventions and policies aimed at reducing youth cigarette smoking and conclude that most educational programs were ineffective. They highlight that only programs emphasizing social influence and that teach refusal skills had some, though small, short-term effects that lasted no longer than 4 years. They also stress that (i) several FDA regulations were successfully repelled by the tobacco industry (e.g. Brown & Williamson Tobacco Corp v. FDA) and that (ii) given limited resources available to FDA to enforce the regulation (Forster and Wolfson 1998), the effectiveness of various governmental programs and regulations is limited. Petruzzello (2014) studies the effects governmental policies have on demand for menthol cigarettes. He finds that

[14] Smoking prevention data is from the Center for Disease Control. The data are available only since 2000, which together with missing information on some firms' headquarters reduces the sample size to 58,704 observations.

"current policies are ineffective in curbing menthol smoking and suggest that if policy-makers continue to pursue an overall reduction in smoking of menthol cigarettes, a complete ban might be required", Petruzzello (2014, 2).

Past research also suggests limited impact advertising bans have on cigarette sales (e.g. Lancaster and Lancaster 2003, Capella et al. 2013). In particular, Capella et al. (2013, 7) perform a meta-analysis of the literature examining impact of cigarette advertising bans and conclude that "[R]esults of the meta-analysis show that cigarette advertising bans do not have a significant effect on cigarette consumption". Thus, even drastic measures, such as advertising bans, have a limited impact on cigarette sales. Finally, previous evidence also suggests that allocation of spending on various disease prevention programs largely reflects local communities attitudes and preferences (Tesh 1988; Ross and Taylor 1998). Together, past evidence suggests that smoking prevention spending correlates with social attitudes to smoking but is unlikely to associate with sin firm characteristics.

Column "Smoke Prevention" in Table 4 shows a positive coefficient on an interaction *SmokePrevent*Tobacco,* which suggests that the compensation premium is larger for tobacco firms headquartered in states with high smoking prevention spending. This result is consistent with the stigma explanation as stronger social disapproval in states spending more on tobacco prevention likely induces greater stigmatization of tobacco executives, who in turn require a larger compensating premium.[15]

[Insert Table 4 around here]

[15] The negative coefficient on *Tobacco* in column "Smoke Prevention" reflects a hypothetical case were smoke prevention spending is 0.

To further analyse the impact variation in social disapproval has on the compensation premium, we examine changes in the compensation premium in firms involved in either production or sale of firearms or military goods, *Arms*. Flynn et al. (1998) highlight negative public attitude to military production because of the association between weapons and death. Goffman (1963) argue that death and bodily mutilation have been pervasive sources of stigmatization in human societies. As identification strategy, we consider changes in public attitude to the firearms industry following the Virginia Tech Massacre. On April 16, 2007 a 23-year-old student killed 32 students and faculty members at Virginia Tech. The event, which became known as the Virginia Tech Massacre, was the deadliest attack by a lone gunman in U.S. history. We suggest that this tragic event increased social stigma against the firearms industry and predict an increase in the compensation premium around the event. We code a dummy variable as 1 for fiscal years 2007–2009 and 0 for fiscal years 2004–2006, *PostMassacre*, and then interact it with *Arms*. Column "Virginia Tech Massacre" of Table 4 reports an increase in executive compensation in the arms industry around the time of the Virginia Tech Massacre.[16]

In untabulated results, we also considered a narrower definition of arms manufactures that focuses on firearms producers and sellers as military manufacturers may not be subject to negative public perception. Specifically, we defined a new variable *Firearms* that is equal to 1 for firms with NAICS equal to 332992 (Small Arms Ammunition Manufacturing), 332993 (Ammunition (except Small Arms) Manufacturing), or 332994 (Small Arms, Ordnance, and Ordnance Accessories Manufacturing), and for firms that are classified as having business involvement in firearms,

[16] We recognize that the frequency of mass shootings has drastically increased since 1980s with at least one mass shooting occurring annually, which reduced their perceived importance among the public (www.theguardian.com/news/datablog/2015/oct/02/mass-shootings-have-no-impact-on-support-for-gun-rights-in-the-us). However, the Virginia Tech Massacre included the highest number of victims on record since 1970 and received substantial media coverage at the time with the media labelling it "deadliest school shooting in American history" reigniting the gun politics debate (www.wikipedia.org/wiki/Media_coverage_of_the_Virginia_Tech_shooting).

including producers of civilian arms, firearms retailers and distributors, or companies that own or that are owned by firearms firms. The interaction term between the *Firearms* dummy and the Virginia Tech massacre indicator is significant and positive and the coefficient is larger compared to the more broadly defined *Arms* dummy (162.16 vs. 64.21). This result is consistent with the intuition that social stigma is more likely to apply to small arms producers than military manufacturers. Together, the two quasi-natural experiments provide support for the conclusion that social stigma attached to sin industries explains higher executive compensation in these industries.

5.3 Reducing Social Stigma through Image Building

Rather than paying a compensation premium to executives, firms can improve their negative public image and thereby reduce the social stigma their executives face. These activities can take various forms, including public relations management and charity spending. Because we do not have a direct measure of the amounts spent on image building, we proxy for them by charity spending. Charity spending should help build a positive image of a firm and counter the negative social perception. Consistently, Brammer and Millington (2005) report a positive association between corporate philanthropy, measured by charitable giving, and firm reputation. Williams and Barrett (2000) argue that charitable giving can mitigate the negative effect of corporate crime on firm's reputation. Bae and Cameron (2006, p. 146) highlight that "[C]orporate philanthropic giving can be considered as the most effective prosocial activity for minimizing public suspicion [of corporate opportunism]". We thus expect that sin firms that improve their public image through charitable giving should be less stigmatized by the society, which should reduce the compensation premium they pay to their executives.

We set the indicator variable *Charity* to 1 if a firm engages in charitable giving, support for housing, support for education, volunteer programs, community engagement and other community

strengths as classified by the MSCI ESG STATS while not having any concerns in these areas, and to 0 otherwise. We then interact *Charity* with *Sin* and expect a negative coefficient on the interaction terms reflecting a lower premium in sin firms that reduce social disapproval by improving their public image. The last column of Table 4 report results for model (1) when we include charity and its interactions with the sin industry dummy. The coefficient on the interaction term is negative, consistent with the prediction that improving a firm's image helps alleviate the negative consequences of social stigma, which in return lowers the compensation premium. This result suggests that image and reputation building is an important channel firms can use to overcome the negative effect of social stigma.

5.4 Alternative Definition of Stigmatized Firms

This section first shows that our conclusion on a compensation premium in sin firms generalizes to other firms subject to social stigma. Second, we present additional tests that discriminate the stigma explanation from explanations based on industry-, firm-, and executive characteristics. Finally, we present tests that address endogeneity concern.

To further exploit variation in the degree of social stigmatization, beyond the split into tobacco, alcohol and gambling industries, we broaden our sin firm definition and define an indicator variable *SinSegment* equal to 1 if a firm has at least one business segment in one of the three sin industries, but not the entire firm is classified as belonging to the sin industry, and 0 otherwise. In contrast to a firm's primary industry classification, which tends to be stable over time, we observe variation in *SinSegment* due to mergers and acquisitions, divestments, and corporate restructuring. This allows us to compare executives' compensation before and after their company engages in activities that attract social disapproval.

We identify 10 instances when a non-sin firm reports acquiring a new business segment that belongs to a sin industry. We then estimate model (1) with the *Sin* and *SinSegment* variables. We observe an increase in *abnormal* executive compensation for non-sin firms that acquired a sin business segment. The increase in compensation is consistent with executives being compensated for social costs related to social stigma attached to the new business segment. Further, because we focus on non-sin executives at the acquirer, this result suggests our conclusion on the compensation premium in sin industries is unlikely to reflect unique characteristics of sin executives.

[Insert Table 5 around here]

As an additional test, we exploit the time-series variation in the *SinSegment* variable and estimate equation (1) with *SinSegment* in lieu of *Sin* dummy and with fixed effects for firm-executive combinations. Column "Sin Segment: Fixed Effects" in Table 5 shows a positive coefficient on *SinSegment*, which suggests that the premium remains significant after controlling for time-invariant executive- and firm-related characteristics. This finding makes it unlikely for our result to be driven by unobserved executive-related or firm-related characteristics.

To provide evidence that our findings generalize beyond the tobacco, gambling and alcohol industries, we use an alternative approach to identify firms subject to negative public perception. Specifically, we create an indicator variable, *SocConcern*, which equals 1 if the MSCI ESG STATS database identifies a firm as having at least one of the following four social concerns: human rights, employee relations, community, or product concerns, and is 0 otherwise. On average, 36% of sample firm-years include cases of firms with at least one of the four social concerns. Column "Social Concerns" in Table 5 shows that including *SocConcern* together with *Sin* in model (1) yields positive coefficients for both *Sin* and *SocConcern*. This result suggests that, independently of the industry a firm belongs to, executives working at firms perceived negatively in light of social norms receive a compensation premium.

Because *SocConcern* varies over time, we are able to augment equation (1) with fixed effects for firm-executive combinations. Fixed effects control for unobserved time-invariant executive and firm characteristics that could influence executive compensation. Column "Social Concerns: Fixed Effects" shows that the coefficient on *SocConcern* remains positive and significant after the inclusion of these fixed effects. This evidence reduces the chances our conclusions are due to unobserved executive or firm characteristics. In sum, results in Table 5 corroborate our conclusion that the compensation premium in sin firms is not a result of unique characteristics of these industries and their executives, but it is driven by social stigma that working in those firms entails.

6. Cost of Social Stigma

We argue that the sin executives' remuneration premium reflects compensation for personal costs resulting from the social stigma attached to their work. This section presents two examples of specific costs that sin firms' executives bear. In particular, we show that sin firm CEOs are: (i) less likely to serve as directors on boards of other firms and (ii) they are less likely to find employment after leaving a sin firm. The intuition behind the two tests is that sin firm executives are less desirable as board members and as new employees because of the social stigma they bear. Fewer board seats exemplify the adverse impact working for a sin firm has on an executive's social recognition. Worse job prospects due to social stigma increase executives' re-employment risk. Both factors should entice executives to demand a compensation premium.

6.1 Outside Board Seats

We first examine executives' likelihood to be invited to serve as directors on other firms' boards. Board seats are an earmark of social status and a source of additional income (Kaplan and Reishus, 1990). Hence, holding fewer seats on outside boards illustrates one type of cost resulting from

social stigmatization. In this analysis, we restrict our attention to the CEOs as outside board membership is rare for non-CEOs. Specifically, around 29% of CEOs serve on at least one outside board, whereas only about one in twenty non-CEOs (5%) hold an outside board seat with few cases for sin firms that would allow meaningful analysis.

To test how social stigma of working for a sin firm affects CEOs opportunities to serve on other firms' boards, we estimate the following regression model (subscripts omitted):

$$\ln(1 + NumOutBoards) = \beta_0 + \beta_1 Sin + \sum \beta_i Firm\ Controls +$$

$$\sum \beta_j Executive\ Controls + \sum \beta_k Corporate\ Governance + \sum \beta_l Year\ effects + \varsigma \quad (2)$$

where *NumOutBoards* is the number of seats in other firms a CEO holds in a fiscal year. *Firm Controls, Executive Controls* and *Corporate Governance* are the controls from model (1) less the CEO dummy. Importantly, the controls include a measure of industry concentration as concentrated industries have fewer within-industry opportunities for outside board membership.[17]

In addition to a lower number of outside boards' seats, we expect sin firm CEOs to serve on less prestigious board. Board prestige should be correlated with firm size as serving on boards of the largest, hence the most prominent firms, is typically associated with the strongest social recognition (Hallock, 1997). Largest firms can also be more selective in their choice of directors and less likely to invite stigmatized executives. We create an indicator variable *TopTercile(Sales)* equal to 1 if at least one of the CEO's outside board seats is in a firm that belongs to the top size tercile based on net sales in a given year, and to 0 otherwise.[18] For CEOs who hold at least one board seat in a given year, we estimate the following logit model (subscripts omitted):

[17] CEOs in more dispersed industries are more likely to find seats on other firms' boards, which is why we control for industry concentration in equation (2). In unreported results, we find that our conclusions are unchanged when we re-estimate equation (2) considering only board seats in firms outside the company's own Fama and French 49 industry.
[18] Our results are unchanged if we use a firm's market value of equity instead of net sales as a proxy for firm size.

$$TopTercile(Sales) = \beta_0 + \beta_1 Sin + \sum \beta_i Firm\ Controls + \sum \beta_j Executive\ Controls +$$

$$\sum \beta_k Corporate\ Governance + \sum \beta_l Year\ effects + \varepsilon \quad (3)$$

where *Firm Controls*, *Executive Controls* and *Corporate Governance* are the controls from model (1).

Consistent with our expectations, column "Outside Board Seats" in Table 6 shows that sin CEOs sit on average on fewer outside boards. Specifically, the number of outside board seats held by sin firm CEOs is on average 14% lower, which is economically meaningful.[19] This result is consistent with the proposition that sin firm CEOs bear a stigma that makes them less desirable board members.

A significant number of executives do not have outside board seats, which suggests a bounded model is preferred to estimate equation (2). Column "Outside Board Seats: ZIP estimation" reports results estimated using the zero-inflated Poisson (ZIP) regression. We use executive age to predict the existence of excess zeros because young managers may have few opportunities to serve on other firms' boards. We follow Cameron and Trivedi's (2010) recommendation to use robust standard errors for Poisson models. The conclusion from the ZIP model is similar to the model estimated using OLS.

To examine the variation in outside board membership across the three sin industries, we modify model (2) to include indicator variables for each sin industry. We expect the strongest effect for CEOs in the tobacco industry, which is the most stigmatized (Anielski and Braaten, 2008; Beneish et al., 2008; Gerstein et al., 2004). Consistently, column "Outside Board Seats: Individual Sin Industries" shows that this effect is more than twice as pronounced for tobacco executives than for gambling executives. In other words, compared to non-sin CEOs, the average number of outside

[19] We estimate the economic magnitude as exp(coefficient) – 1.

board seats is 35% lower for tobacco CEOs, but only 14% lower for gambling CEOs. Our conclusion that tobacco executives are least likely to seat on outside boards persists when we estimate the regression using the zero-inflated Poisson model (column "Outside Board Seats: Individual Sin Industries & ZIP Estimation").

[Insert Table 6 around here]

Next, we examine the prestige of outside boards that sin firm CEOs are members of. Column "Board Prestige" reports that sin firm executives are less likely to serve on boards of the largest and thus the most prominent firms. Conditional on holding at least one outside board seat, the odds of serving on a prestigious outside board are 63% lower for sin than for non-sin CEOs, which is economically meaningful. Jointly, Table 6 results support the prediction that executives from sin industries enjoy lower social status associated with board membership, which exemplifies one type of a personal cost they bear.

6.2 Re-employment Opportunities

Social stigma may adversely affect executives' future job prospects. If stigmatized executives are 'shunned' by the business community, they will face greater difficulty in finding new employment after leaving a sin firm. To test this prediction, we examine the likelihood that executives will find new employment within five years of leaving a sin firm. Fee and Hadlock (2004) report that the average time to find new employment is approximately 9 months for their sample of CEOs and non-CEOs, which means that the five-year gap should capture most of the executive turnover.[20] For this analysis, we consider only executives who are no more than 50 years old when leaving

[20] The Wall Street Journal's article 'When Chief Executives Become Job Seekers' highlights that '[L]anding a new CEO role usually takes 10 to 12 months, Ms. Meneley says. Former chiefs can't stay out of the game too long, however: After more than a year out of the corner office, candidates get stale, search experts say.' http://www.wsj.com/articles/SB10001424052702304585004579419060726896546.

their original employer as older executives may be less motivated to seek new employment. The specification of the logit model is (subscripts omitted):

$$Probability(New\ Job) = \beta_0 + \beta_1 Sin + \sum \beta_i Firm\ Controls + \sum \beta_j Executive\ Controls +$$

$$\sum \beta_k Corporate\ Governance + \sum \beta_l Year\ effects + e \quad (4)$$

where *Firm Controls*, *Executive Controls* and *Corporate Governance* are the controls from model (1). As highlighted earlier, the controls include a measure of industry concentration as re-employment opportunities may be limited for more concentrated industries.

Column "New Job" of Table 7 reports results for equation (4). We find a negative coefficient on *Sin*, which suggests that sin executives are less likely to find re-employment within five years of leaving their original employer compared to executives from other industries. This result is consistent with sin firm executives facing worse job prospects because of the social stigma attached to their previous employment. Examining the economic magnitude of the effect, we observe that the odds of re-employment are 68% lower for executives leaving sin compared to non-sin firms, a substantial reduction.

A caveat of equation (4) is that we cannot track executives that move to private or international firms.[21] To build confidence in our conclusion, we also focused on CEOs as they are more likely to find reemployment that is reported in ExecuComp database. Non-sin CEOs have a 9.1% likelihood of finding re-employed within five years. In contrast, none of the CEOs exiting sin firms in our sample found a new job within five years. To check if this is due to these executives moving to private or international firms, we looked up sin CEOs profiles on LinkedIn and other sources, but found no evidence this is the case. For example, Michael Szymanczyk, CEO of Altria Group between 2008 and 2012, currently serves on the board of trustees and an advisory council.

[21] We thank an anonymous referee for highlighting this point.

Marty Barrington, the current CEO of Altria Group, is set to retire this year and not seek other positions. Louis Camilleri, CEO of Philip Morris International from 2007, retired in 2014 with no further re-employment apart from board memberships in Ferrari and Philip Morris International. Paul Adams, CEO of British American Tobacco between 1991 and 2010 "planned to spend time with his family after 36 years of work. He had no plans beyond travelling, but added that board appointments could not be ruled out." (Stafford and Yuk, 2010). Our online search produced no evidence he is currently employed anywhere. Daniel Delen, CEO of R.J. Reynolds Tobacco Company 2011–2014, acts as a consultant to Reynolds American Inc. This anecdotal evidence suggests our results are not due to using ExecuComp data, which covers only public firms.

[Insert Table 7 around here]

An executive may ultimately find re-employment after leaving a sin firm, however, the time to find a new job may be considerable. Thus, the gap between consecutive appointments proxies for an important re-employment cost. To capture this effect, we create a variable *JobGap* that counts the number of years to re-employment. Column "Job Gap" of Table 7 shows the result for equation (4) with *JobGap* as the dependent variable. The positive coefficient indicates that sin executives take longer to find a new position, which complements the earlier result on their greater difficulty in finding a new job.

If sin executives are stigmatized, we expect them to find re-employment at smaller, less prestigious firms. To test this prediction, we calculate the relative size of the firm the executive joins, i.e. the log of the ratio where we scale the size of the firm an executive joins by the size of the firm an executive departs. We measure firm size by net sales, but our conclusions are unchanged when we use a firm's market capitalization. Column "New Employer Prestige" documents that sin executives are significantly less likely to join a relatively larger, i.e. a more prestigious firm,

compared to the firm they leave. This result is consistent with more prestigious firms shunning sin executives because of their stigma.

Our results that sin firm executives have a harder time to find new employment may reflect their general reluctance the leave a sin firm, for example due to the high compensation they receive. This can lead to a negative selection in the group of sin executives that change jobs. To investigate whether a higher propensity of sin firm executives to retain their jobs may explain our results, we define a variable *Stay* as equal to 1 if an executive is still employed by the same firm in the following fiscal year and 0 otherwise. We then regress *Stay* as the dependent variable in equation (4). We recognize that the decision to stay is likely affected by the level of current compensation, thus we control for executive's percentage abnormal compensation, *PctAbnComp*, defined as the residual scaled by the predicted value from equation (1) estimated excluding the *Sin* dummy. Results in column "Stay" in Table 7 confirm that executives are less likely to leave a firm if they receive abnormally high compensation. Importantly, controlling for the superior pay sin firm executives receive, they are *more* likely to leave their employer compared to other executives. Thus, it is unlikely that negative selection of executives who leave sin firms explains their poorer job prospects.[22]

Sin executives may accumulate specialist knowledge and skills, i.e. industry-specific capital, that is not easily transferable across industries. Higher specialist rather than general managerial capital may reduce executives' re-employment opportunities (Custódio et al., 2013; Murphy and Zabojnik, 2007). To investigate this possibility, we estimate the likelihood that sin firm executives

[22] Equation (4) includes executives who left their previous employer up to five years before the end of our sample period, which leaves 1,525 observations. When calculating the gap between employments and prestige of the new employer, we remove executives who did not find employment, which leaves 1,388 observations. When predicting whether an executive will stay at the firm till the next year we remove the last observation for each executive-firm-year as the subsequent year is unobservable, which leaves 55,201 observations.

stay within the same industry after leaving their former employer. The specialist competence explanation would predict that sin firm executives should be more likely to be re-employed in the same industry. Column "Same Industry" shows that sin executives are *less likely* to find re-employment within the same Fama and French 49 industry. This result, together with the result on the greater propensity of sin firm executives to leave their employer, are inconsistent with the proposition that the premium we document compensates sin firm executives for specific expertise or skills that are valuable in their firm or industry.

Finally, we examine changes in executive compensation upon joining and leaving a sin firm. We define $\Delta Comp$ as the natural logarithm of one plus the percentage change in total compensation between the old and the new job obtained no later than five years after quitting the old job. *JoinSin* equals 1 when an executive switches from a non-sin firm to a sin firm and 0 otherwise. *LeaveSin* equals 1 when an executive switches from a sin firm to a non-sin firm and 0 otherwise. Column "Change in Compensation" shows an increase in compensation when an executive joins a sin firm and a reduction in compensation when an executive leaves a sin firm. This result, which keeps managerial ability constant, suggests that the premium reflects an executive's exposure to sin firm activities, which is consistent with the social stigma explanation. Overall, Table 7 results support the prediction that higher remuneration of executives at sin firms compensates them, among others, for worse job prospects they face due to the social stigma that working in sin industries entails.

7. Compensation Risk and Litigation Risk

This section shows that the premium we identify is not due to higher compensation risk at sin firms. Equation (1) controls for business risk, which correlates with the remuneration risk.[23] However, to build confidence in our conclusions, we present three additional tests that directly addresses how the risk embedded in compensation contracts affects sin executives' compensation.

First, we compute a measure of the relative importance of equity-based compensation in executive pay, *EqComp/SalBon*, which is the ratio of annual equity-based compensation (the sum of annual restricted stock awards and stock option grants) to cash compensation (the sum of salary and bonus). This approach follows Coles et al. (2014) and Yermack (1995). Prior research suggests that the most important driver of the pay-performance sensitivity is the executive's equity ownership resulting from restricted stock awards and (in particular) from stock options grants. Jensen and Murphy (1990, 2) highlight that "[T]he most powerful link between shareholder wealth and executive wealth is direct stock ownership by the CEO." Hall and Liebman (1998, 654) argue that "virtually all of the pay to performance sensitivity is attributable to changes in the value of CEO holdings of stock and stock options." and that "[T]he key implication of these results is that the pay to performance sensitivity from direct compensation is tiny in comparison to the sensitivity generated by holdings of stock and stock options". We then use *EqComp/SalBon* as the dependent variable in equation (1).

Columns "Equity Compensation" and "Equity Compensation: Individual Industries" in Table 8 show a negative coefficient on *Sin* and the three sin industries. This result suggests that the pay-

[23] Roulstone (2003) documents that higher business risk leads to higher variability in compensation and higher likelihood of bankruptcy and employment termination, which indicate higher compensation risk. Philippon and Reshef (2012) document a positive association between income risk and the level of compensation. Research shows that managers consider the compensation risk in decisions on the firm investment (Eisdorfer et al., 2013), the capital structure (Dong et al., 2010; Brisker et al., 2014), and in their option trading (Ordu and Schweizer, 2015).

performance sensitivity is *lower* in sin firms than in other firms. This evidence suggests the compensation premium we identify is not due to higher compensation risk.

[Insert Table 8 around here]

Second, we follow Jensen and Murphy (1990) and regress the change in total compensation ($\Delta Comp_{t,t-1}$) on the current and past change in shareholder wealth ($\Delta Wealth_t$ and $\Delta Wealth_{t-1}$) measured by stock returns multiplied by inflation-adjusted market value of a firm's equity in the beginning of the year. We interact changes in shareholder wealth with the indicator variable for sin firms ($Sin_t * \Delta Wealth_t$ and $Sin_t * \Delta Wealth_{t-1}$). If sin firms choose to impose a greater compensation risk on their executives, by making their compensation more dependent on firm performance, we would expect to find positive interaction terms between *Sin* and the contemporaneous and lagged changes in shareholders wealth.

Results in column "Pay-Performance Sensitivity" show no evidence of a greater sensitivity of executive compensation to firm performance in sin firms. While the main effects of $\Delta Wealth_t$ and $\Delta Wealth_{t-1}$are positive as expected, their interactions with *Sin* are not different from zero. This result suggests that the remuneration premium in sin firms does not compensate executives for potentially higher risk induced by a different structure of their compensation contracts.

Our final test examines performance-related executive turnover. Sin companies may be more willing to let go of underperforming managers than other industries, which would impose greater risk on sin firm executives and justify a premium in executive remuneration to compensate for this risk. The model specification we use to test this proposition is:

$$Probability\ (Stay_{t,t+1}) = \beta_0 + \beta_1 Sin_t + \beta_2 Sin_t * \Delta Wealth_t + \beta_3 Sin_{1_t} * \Delta Wealth_{t-1} +$$
$$\beta_4 \Delta Wealth_t + \beta_5 \Delta Wealth_{t-1} + \sum \beta_i Firm\ Controls + \sum \beta_j Executive\ Controls +$$
$$\sum \beta_k Corporate\ Governance + + \sum \beta_l Year\ effects + v_t. \quad (5)$$

where *Stay* is a dummy variable equal to 1 if an executive retained employment in the company until the following year, and 0 otherwise.

Column "Conditional Turnover" presents results for model (5). Consistent with past research, we observe positive main effects of $\Delta Wealth_t$ and $\Delta Wealth_{t-1}$, which suggests that poor performance increases the probability of employment contract termination (Coughlan and Schmidt, 1985; Jenter and Lewellen, 2014). However, we find no evidence that executives at sin firms are more likely to lose their jobs because of poor performance compared to executives in other industries. [24]

[Insert Table 8 around here]

The compensation premium in sin industries may also reflect higher litigation risk that may potentially have an indirect effect on an executive's reputation. However, there is little evidence to support this claim. Specifically, previous studies do not include sin firms among industries with higher litigation risk (e.g. Francis et al., 1994; Shu, 2000; Johnson et al., 2001; Field et al., 2005; Rogers and Stocken, 2005). Rather, these studies consider firms that operate in the bio-technology, computing, electronics, and retail industries as susceptible to litigation risk. Lower litigation risk may reflect active risk management by sin firms and we find evidence supporting this claim. To illustrate, Imperial Tobacco's risk management disclosure states that "[T]o date, no tobacco litigation claim brought against the Group has been successful and/or resulted in the recovery of damages. We employ internal and external lawyers specializing in the defense of product liability

[24] Missing values for fiscal-year stock return data reduces our sample for regressions in columns "Pay-Performance Sensitivity" and "Conditional Turnover" to 68,044 observations.

litigation to provide advice and guidance on defense strategies and to direct and manage litigation risk and monitor potential claims around the Group." Similarly, British American Tobacco's risk management disclosure states that "[O]ur exposure to U.S. litigation was reduced when R.J. Reynolds Tobacco combined with our former U.S. business Brown & Williamson Tobacco in 2004. This means that we no longer have a wholly-owned subsidiary operating in the U.S. market; instead, we have a 42% shareholding in Reynolds American. Reynolds American now manages and co-ordinates Brown & Williamson defendant cases."[25] Thus, the compensation premium in sin industries is unlikely to be driven by litigation risk.

8. Conclusions

This study documents a significant compensation premium paid to executives in firms perceived negatively in light of social norms. We present evidence consistent with the premium compensating for the costs associated with the social stigma that work at certain firms entails. Focusing on tobacco, gambling and alcohol industries, commonly referred to as sin industries, we find that the compensation premium (i) increases with the level of negative social attitude towards sin firms and (ii) rewards loss in executives' social status, as proxied by the lower number of outside board seats, and impaired re-employment prospects. The results generalize to other firms subject to negative social perception. Our evidence highlights the significant impact social norms have on managerial compensation contracts.

[25] British American Tobacco's risk management disclosure is available at www.imperial-tobacco.com/files/financial/reports/ar2011/index.asp?pageid=30. Imperial Tobacco's risk management disclosure is available at www.bat.com/group/sites/UK__9D9KCY.nsf/vwPagesWebLive/DO728EBU.

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Table 1. Variables Definitions

Variable	Definition
Executive compensation	
Comp	Inflation-adjusted value of the executive's total compensation. It comprises of salary, bonus, restricted stock grants, stock option grants, long-term incentives, and other annual compensation.
Indicators for sin industries	
Sin	A dummy variable equal to 1 if a firm belongs to a sin industry, and 0 otherwise. We classify as sin industries those with *SIC* codes 2100–2199 (tobacco), *NAICS* codes 7132, 71312, 713210, 71329, 713290, 72112, or 721120 (gambling), and *SIC* codes 2080–2085 (alcohol).
Tobacco	A dummy variable equal to 1 if the firm's *SIC* code is 2100–2199, and 0 otherwise.
Gambling	A dummy variable equal to 1 if the firm's *NAICS* code equals 7132, 71312, 713210, 71329, 713290, 72112, or 721120, and 0 otherwise.
Alcohol	A dummy variable equal to 1 if the firm's *SIC* code is 2080–2085, and 0 otherwise.
SinSegment	A dummy variable equal to 1 if the firm has at least one business segment in one of the three sin industries (i.e. tobacco, gambling, alcohol), but not the entire firm is classified as belonging to the sin industry, and 0 otherwise.
Arms	An indicator variable equal to 1 if the firm's operations are classified by MSCI ESG STATS as involving either firearms or military production or sales, and is 0 otherwise. MSCI ESG STATS started classifying firms' operations as involving either firearms or military production or sales in 1999.
JoinSin	A dummy variable equal to 1 when an executive changes employment from a non-sin firm (i.e. *Sin* = 0) to a sin firm (i.e. *Sin* = 1) and 0 otherwise.
LeaveSin	A dummy variable equal to 1 when an executive changes employment from a sin firm (i.e. *Sin* = 1) to a non-sin firm (i.e. *Sin* = 0) and 0 otherwise.
SocConcern	A dummy variable equal to 1 if the MSCI ESG STATS database identifies a firm as having at least one of the following four social concerns: human rights concerns (e.g. the company's operations have been the subject of major recent human rights controversies), employee relations concerns (e.g. employee health, safety and child labour concerns), community concerns (e.g. the company is involved in a controversy that has mobilized community opposition, or is engaged in other noteworthy community controversies), or product concerns (e.g. controversies related to the quality and safety of a firm's products and services), and is 0 otherwise.
Executive control variables	
CEO	A dummy variable equal to 1 if the *ExecuComp* annual CEO indicator equals 1 or the executive has the highest pay for a firm-year and the executive's job title includes 'CEO' or 'Chief Executive Officer', and 0 otherwise.
CFO	A dummy variable equal to 1 if the executive's job title includes 'CFO' or 'Chief Financial Officer' or 'Chief Finance Officer', and 0 otherwise.
Female	A dummy variable equal to 1 if the *ExecuComp* gender variable is equal to female, and 0 otherwise.
Tenure	The number of years an executive has worked for the company. We re-set the year counter if the executive is re-employed by the company after more than two years.
Ability	The managerial ability score from Demerjian et al. (2012).
Firm control variables	
MV	Market value of equity measured as the natural logarithm of the number of shares outstanding multiplied by the stock price at the end of the fiscal year.
Sales	The natural logarithm of net sales for the fiscal year.
Sales GR	Sales growth in the past five years. We use at min. three years of sales data to calculate sales growth.
ROA	Return on assets, which is the ratio of operating income after depreciation divided by total assets.
XRET	Excess stock returns computed as the return on the company's stock over the fiscal year less the CRSP value-weighted market return.
SD RET	Standard deviation of daily excess returns calculated over the fiscal year.
negHHI	The Herfindahl-Hirschman concentration index of a firm's net sales computed for a combination of a given 2-digit SIC industry and fiscal year, multiplied by -1.
SmokePrevent	Per capita smoking prevention spending in a US state where the company is headquartered.
PostMassacre	A dummy variable equal to 1 for years following the Virginia Tech Massacre (2007–2009) and 0 for years preceding it (2004–2006).
Charity	A dummy variable equal to 1 if a firm engages in charitable giving, support for housing, support for education, volunteer programs, community engagement and other community strengths as classified by the MSCI ESG STATS while not having any concerns in these areas, and 0 otherwise.

Continued on next page

Table 1, continued

Corporate governance control variables	
InstOwn	The value of total institutional ownership as a percentage of market capitalization.
ChairCEO	A dummy variable equal to 1 if the CEO is also chairman of the board, and 0 otherwise
BoardSize	The total number of directors on the board.
InsideDirs	The percentage of board directors who are classified by the Institutional Shareholder Services (ISS) database as "E" (employee/insider).
AppointDirs	The percentage of outside directors that have been appointed to the board since the year when the current CEO was first classified as the CEO by the ExecuComp database. We consider an executive to be the CEO if the ExecuComp "CEO" indicator equals 1 or the executive has the highest pay for a firm-year and the executive's job title description includes 'CEO' or 'Chief Executive Officer'.
AffilDirs	The percentage of board directors who are classified by the ISS database as "L" (linked).
InterlockDirs	The percentage of board directors with the ISS "interlocking" variable equal 1.
OldOutDirs	The percentage of outside directors over the age of 69.
BusyOutDirs	The percentage of outside directors who serve on three or more other boards.
ExecOwn	The percentage stock ownership of the executive.
BlockOwn	A dummy variable equal to 1 if an internal non-CEO director owns at least 5% of outstanding shares, and 0 otherwise.
OutDirOwn	The average stock ownership (as a percentage of outstanding shares) of outside directors at the firm's last board meeting date of the fiscal year.
Lobby	Aggregate lobbying expenditures to all contributors per firm-year as percentage of net sales.
Fixed effects	
Year FE	Fixed effects for fiscal years.
Exec-Firm FE	Fixed effects for combinations of an executive and a firm, i.e. for executive "jobs".

Notes: The table reports definitions of variables used in the study.

Table 2. Descriptive Statistics

	mean	*sd*	*p25*	*p50*	*p75*
Panel A: Executive compensation					
Comp	1,180	1,577	329	626	1,306
Sin Comp	1,943	2,125	618	1,090	2,413
Non-Sin Comp	1,169	1,566	327	621	1,293
Tobacco Comp	2,753	2,360	988	1,704	3,944
Gambling Comp	1,350	1,801	355	734	1,485
Alcohol Comp	2,203	2,150	815	1,395	2,656
Panel B: Firm characteristics					
MV	7.434	1.524	6.354	7.249	8.369
Sales	7.265	1.497	6.249	7.138	8.202
Sales GR	0.143	0.186	0.039	0.101	0.195
ROA	0.104	0.093	0.060	0.102	0.151
XRET	0.055	0.479	−0.232	−0.011	0.243
SD RET	0.025	0.012	0.017	0.022	0.031
negHHI	−0.068	0.059	−0.077	−0.046	−0.036
Panel C: Executive characteristics					
CEO	0.185	0.388	0.000	0.000	0.000
Female	0.062	0.241	0.000	0.000	0.000
Tenure	5.588	3.616	3.000	5.000	7.000
Ability	0.018	0.135	−0.070	0.008	0.096
Panel D: Institutional ownership, corporate governance, and political lobbying					
InstOwn	0.474	0.424	0.000	0.626	0.884
ChairCEO	0.550	0.498	0.000	1.000	1.000
BoardSize	9.031	2.311	7.000	9.000	10.000
InsideDirs	0.198	0.107	0.111	0.167	0.250
AppointDirs	0.388	0.301	0.111	0.375	0.667
AffilDirs	0.108	0.126	0.000	0.091	0.167
InterlockDirs	0.006	0.027	0.000	0.000	0.000
OldOutDirs	0.122	0.133	0.000	0.100	0.200
BusyOutDirs	0.088	0.113	0.000	0.000	0.143
ExecOwn	0.001	0.006	0.000	0.000	0.000
BlockOwn	0.082	0.275	0.000	0.000	0.000
OutDirOwn	0.004	0.009	0.000	0.001	0.003
Lobby	4.031	23.658	0.000	0.000	0.000

Notes: Panel A reports descriptive statistics for executive compensation for the pooled sample and split between sin and non-sin firms. Panels B to D report descriptive statistics for control variables from equation (1). Variable definitions are in Table 1. All continuous variables are winsorized at the 1% level. The number of executive-firm-year observations is 82,625.

Table 3. Compensation Premiums in Sin Industries

	Full model	Individual Sin Industries	Only CEOs	Only CFOs	Other executives
	coef/t	*coef/t*	*coef/t*	*coef/t*	*coef/t*
Sin	279.07***		388.16**	246.59*	261.86***
	(2.86)		(2.19)	(1.75)	(3.58)
Tobacco		642.86***			
		(6.25)			
Gambling		195.93***			
		(4.23)			
Alcohol		185.73*			
		(1.88)			
Firm Controls	Yes	Yes	Yes	Yes	Yes
Executive Controls	Yes	Yes	Yes	Yes	Yes
Corporate Governance	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	82,625	82,625	15,514	14,238	59,091
Adj. R2	0.403	0.404	0.452	0.355	0.299

Notes: The table reports regression results for equation (1). The dependent variable is total compensation (*Comp*). Column "Full Model" and "Individual Sin Industries" present regression results for the full sample. Models "Only CEOs", "Only CFOs", and "Other executives" are based on sub-samples of Chief Executive Officers, Chief Financial Officers and the other executives, respectively. Variables definitions are in Table 1. Intercept is untabulated for brevity. The *t*-statistics reported in parentheses below coefficients are based on standard errors clustered at the industry and fiscal year level. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 4. Sensitivity Tests: Addressing Endogeneity

	Smoke Prevention	Virginia Tech Massacre	Image Building: Charity
	coef/t	*coef/t*	*coef/t*
Sin		374.57***	322.80***
		(3.50)	(3.31)
Tobacco	−291.56***		
	(−2.61)		
SmokePrevent	8.32		
	(0.97)		
*SmokePrevent * Tobacco*	458.76***		
	(8.93)		
Arms		−72.44	
		(−0.95)	
PostMassacre		−147.88***	
		(−8.49)	
*PostMassacre * Arms*		64.21**	
		(2.26)	
Charity			109.01***
			(2.64)
*Charity * Sin*			−248.72***
			(−3.67)
Firm Controls	Yes	Yes	Yes
Executive Controls	Yes	Yes	Yes
Corporate Governance	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	58,704	29,271	82,625
Adj. R2	0.437	0.434	0.404

Notes: The table reports regression results that address the endogeneity concern. The dependent variable is total compensation (*Comp*). Variables definitions are in Table 1. Intercept is untabulated for brevity. The *t*-statistics are based on standard errors clustered at the industry and fiscal year level. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 5. Alternative Measures of Negative Public Perception

	Sin Segment:	Sin Segment: Fixed Effects	Social Concerns	Social Concerns: Fixed Effects
	coef/t	*coef/t*	*coef/t*	*coef/t*
Sin	280.70***		279.31***	
	(2.87)		(2.74)	
SinSegment	234.08**	588.31***		
	(2.24)	(4.05)		
SocConcern			44.93**	44.82**
			(2.02)	(2.23)
Firm Controls	Yes	Yes	Yes	Yes
Executive Controls	Yes	Yes	Yes	Yes
Corporate Governance	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Exec-Firm FE	No	Yes	No	Yes
N	82,625	82,625	82,625	82,625
Adj. R2	0.404	0.091	0.403	0.091

Notes: The table reports regression results for equation (1) using alternative approaches to identify firms subject to negative public perception. The dependent variable in all models is total executive compensation (*Comp*). Variables definitions are in Table 1. Intercept is untabulated for brevity. The *t*-statistics are clustered at the industry level. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 6. Outside Board Membership

	Outside Board Seats	Outside Board Seats: Individual Sin Industries	Outside Board Seats: ZIP estimation	Outside Board Seats: Individual Sin Industries & ZIP Estimation	Board Prestige
	coef/t	*coef/t*	*coef/z*	*coef/z*	*coef/z*
Sin	−0.15**		−0.70***		
	(−2.00)		(−5.22)		(−2.33)
Tobacco		−0.43***		−17.99***	
		(−12.94)		(−89.85)	
Gambling		−0.15***		−2.33***	
		(−32.32)		(−3.38)	
Alcohol		−0.00		−0.16	
		(−0.13)		(−1.32)	
Firm Controls	Yes	Yes	Yes	Yes	Yes
Executive Controls	Yes	Yes	Yes	Yes	Yes
Corporate Governance	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	16,415	16,415	16,376	16,376	3,964
Adjusted R2	0.209	0.211			0.255

Notes: The table reports regression results for board seats that executives hold in other firms than the one they are employed in. The first two columns report results for equation (2) where the dependent variable is the natural logarithm of one plus the number of seats an executive holds in other firms in a fiscal year. Columns three and four show results of the zero-inflated Poisson regressions using the number of board seats as the dependent variable and executives' age as the variable predicting the existence of excess zeros. Column "Board Prestige" reports results for equation (3) where the dependent variable is a dummy equal to 1 if at least one of executive's outside board seats is in a firm that belongs to the top size tercile based on net sales in a given year, and to 0 otherwise. Equation (3) is estimated for executives who hold at least one outside board seat. Variables definitions are in Table 1. Intercept is untabulated for brevity. The *t*-statistics and *z*-statistics are based on standard errors clustered at the industry and fiscal year level. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 7. Re-Employment

	New Job	Job Gap	New Employer Prestige	Stay	Same Industry	Change in Compensation
	coef/z	*coef/t*	*coef/t*	*coef/z*	*coef/z*	*coef/t*
Sin	−1.15**	0.56***		−0.13***	−0.98***	
	(−1.96)	(2.71)		(−3.07)	(−2.92)	
JoinSin			0.77**			0.46**
			(2.57)			(2.10)
LeaveSin			−0.24**			−0.07*
			(−2.21)			(−1.75)
PctAbnComp				0.04***		
				(3.46)		
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Executive Controls	Yes	Yes	Yes	Yes	Yes	Yes
Corporate Governance	Yes	No	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1,525	1,388	1,388	55,201	1,388	1,388
Adj. R2	0.154	0.137	0.209	0.066	0.060	0.030

Notes: Column "New Job" reports results for equation (4) where the dependent variable equals 1 if an executive (below the age of 50) is re-employed within 5 years after leaving a firm and 0 otherwise. The dependent variable in column "Job Gap" is the number of years it takes for a departing executive (below the age of 50) to find re-employment. The dependent variable in column "New Employer Prestige" is the natural logarithm of one plus the ratio of the new employer's net sales to the old employer's net sales. This variable is defined for executives who find reemployment within five years. The dependent variable in column "Stay" equals 1 if an executive (below the age of 63) keeps his or her current employment till next year and 0 otherwise. Column "Same Industry" reports results where the dependent variable equals 1 if an executive finds re-employment within 5 years in the industry of his or her former employer and zero otherwise. The dependent variable in column "Change in Compensation" is the natural logarithm of one plus the ratio of the total compensation at new employer divided by the total compensation at old employer; we retain observations where the executive finds reemployment within five years. Other variables are defined in Table 1. Intercept is untabulated for brevity. The *t*-statistics and *z*-statistics are based on standard errors clustered at industry and fiscal year level. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 8. Risk of Executive Remuneration

	Equity Compensation	Equity Compensation: Individual Industries	Pay-Performance Sensitivity	Conditional Turnover
	coef/t	*coef/t*	*coef/t*	*coef/z*
Sin	−0.42***		−45.41	0.02
	(−3.13)		(−0.49)	(0.56)
Tobacco		−0.82***		
		(−4.73)		
Gambling		−0.39***		
		(−4.53)		
Alcohol		−0.26***		
		(−2.63)		
dWealth (y0)			216,097.53***	127.64***
			(5.52)	(7.83)
dWealth (y-1)			159,673.38***	104.66***
			(3.13)	(5.07)
*dWealth (y0) * Sin*			−129,799.26	3.76
			(−0.65)	(0.04)
*dWealth (y-1) * Sin*			−38,915.74	−265.19***
			(−0.15)	(−4.41)
Firm Controls	Yes	Yes	Yes	Yes
Executive Controls	Yes	Yes	Yes	Yes
Corporate Governance	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	82,625	82,625	68,044	68,044
Adj. R2	0.218	0.218	0.024	0.056

Notes: The dependent variable in the first two columns is the ratio of annual equity-based compensation (the sum of annual restricted stock awards and stock option grants) to cash compensation (the sum of salary and bonus). The dependent variable in column "Pay-Performance Sensitivity" is the annual change in total executive compensation (*Comp*). Δ*Wealth(t)* is the change in shareholder wealth defined following Jensen and Murphy (1990) as $r(t) - V(t\text{-}1)$, where $r(t)$ is the inflation-adjusted rate of return on common stock for a fiscal year t, and $V(t\text{-}1)$ is the firm value at the end of the previous year. Δ*Wealth(t-1)* is the previous year *ΔWealth.* Column "Conditional Turnover" reports regression results for equation (5) where the dependent variable equals 1 if an executive keeps his or her current employment till next year and 0 otherwise. Because Δ*Wealth* captures firm's overall performance, we remove performance controls *ROA*, *XRET*, and *Sales GR* from the last two models. Intercept is untabulated for brevity. The *t*-statistics are based on standard errors that are clustered at industry and fiscal year level. The *z*-statistics are clustered at industry level. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.